UNITOR

Instruction Manual

HPC Extreme
330 / 405 / 520

CE

03/13

Wilhelmsen Ships Service

Short Manual

Read and familiarize yourself with operation manual.
Operator should wear appropriate protective clothing.

Before start-up

Attention

- Check power supply matches electrical data of machine.
  If voltage deviates by more that 10 %, there is a risk of damage due to overheating.
- Unreel extension cables completly.
  Cable length max. 50 m = 6 mm², more than 50 m = 10 mm².
- Check water filter, if necessary exchange with original spare part.
- Flush water mains and hose throughly prior to connecting hose to machine, use CLEAN water only.
- Ensure sufficient water supply - minimum 2 bar, 20 l/min.
- Check oil level, if necessary refill with Hypoid Gear Oil SAE 85HP only.

Operation

Attention

- Never drop or strike nozzle onto deck or use it as a hammer - that causes mechanical shock.
- Point lance/nozzle downwards at every start-up.
  After working pressure has built up, Powerspeed nozzle can be turned into working position.
- Never direct water jet towards living creatures, electric wiring or machine itself.
- Watch out for recoil/torque.
- If machine cuts off due to water shortage, check correct water supply. Do not attempt frequent start procedures in quick succession.

After use

Attention

- Flush and rinse unit, hoses, and accessories thoroughly with clean water after using sea water and before storage.
- Store unit in dry, safe, frost-protected area.

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HPE-02/13-VS

1. Introduction

Congratulations - you have purchased one of the most durable and reliable high pressure cleaners available on the market. Its balanced ratio of water flow and working pressure perfectly meets all cleaning requirements. The high pressure cleaner conforms to all European safety regulations which is guaranteed by the CE symbol.

- This manual to be made available to the operating personnel and to be read completely before start-up. We point out that we cannot be held responsible for any damage or malfunctions as a result of ignoring this manual.

- The machine described in this manual to be inspected every year by qualified personnel. Inspection results to be recorded and to be made available to authorities on request. The manufacturer offers qualified service personnel to carry out safety inspections at attractive prices.

- The packing materials (plastic foil, wood, cardboard boxes, nails etc.) are potentially dangerous, should be kept away from children and disposed according to environmental requirements.

This symbol appears at all operating and safety instructions dealing with risks for personal entirety and life.

This warning symbol appears in the operating manual at all operating safety instructions dealing with risks due to electric power.

This symbol appears at all operating and safety instructions dealing with the fulfilment of rules, regulations and instructions for the proper operation and destruction of the machine.

This manual is subject to technical alteration.

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2. Safety Instructions

The following instructions to be followed before, during and after work:

This instruction manual to be read completely before initial start-up. If strictly followed, no danger should occur.

This machine must only be run by qualified adult persons who are fully familiar with possible dangers. Relevant national safety rules to be followed.

The machine is not suitable for unattended operation and must be operated according to specification. Protective clothing to be worn.

The water jet emerging from the spray pistol has a dangerous cutting effect. Therefore the water jet must never be directed onto persons, animals or electrical installations. It must never be used for cleaning of clothes, footwear and the like. Be aware of torque and recoil. Ensure stable foothold.

The max. allowed pressure which is stated on the type plate must not be exceeded. The unloader valve opens, if the max. operating pressure is exceeded by more than 10 % and returns the water into the suction side of the high pressure pump. The unloader valve is workshop-set and sealed. Adjustment must not be changed.

Unsuitable respectively defective high pressure hoses often cause severe accidents during operation. Therefore high pressure hoses to be carefully inspected before start-up and replaced by original equipment in case of damage. Use of other than original equipment which has not expressively been approved by the manufacturer, results in expiration of the CE Declaration of Conformity, as well as product liability and warranty.

Used or damaged high pressure hoses must never be repaired and reused but to be replaced by original hoses.

Spray pistols with delayed closing mechanism must not be used because of risk of injuries.

Lever of pistol in open position must never be blocked or fixed in any way.

The use of spray wands shorter than 750 mm is prohibited.

The machine must not be run in areas jeopardized by fire or explosions. During operation at filling stations “Technical Rules for flammable Liquids” (TfbF) to be observed.

Consumables like detergents or lubricants to be handled thoroughly according to technical rules and safety and environmental regulations to be observed.

Machine must not be started, if power cable, plug, switches, etc. are damaged or defective.

Only extension cables designed according to IEC to be used. Extension cables on reels to be completely reeled off during operation in order to avoid overheating of the cable. Plug, couplings to be watertight. A faulty current protection switch to be foreseen in electricity supply.

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Before opening the machine in case of malfunction or emergency, switch off by means of the ON/OFF switch and disconnect it from electric power source.

Electric power can cause severe injuries or death. All symptoms of faulty electric components to be taken seriously and possible causes for accidents to be eliminated immediately. All repair work only to be carried out by qualified service personnel.

Make sure that the machine cannot move. The unit is equipped with a parking brake which must be set during working.

During loading hoisting device to be fastened properly at jack rings. Ensure balanced load.

Repair work in the high pressure section of the machine (pump, hoses, piping) only to be carried out by qualified personnel.

After work the machine to be locked and secured against unauthorized/accidental operation by means of the pistol lever safety lock.

Use of equipment and/or consumables which is/are not delivered or expressively approved by the manufacturer results in expiration of the CE Declaration of Conformity, as well as product liability and warranty.

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3. Configuration, Operation, Illustration

The cold water machines of this series mainly comprise of a low speed high pressure inline plunger pump, which is directly flanged to and driven by a 100 % duty electric motor.

The supply water is directed with the required minimum pressure via a pre-filter to the high pressure pump which – in connection with the required spray nozzle – boosts it to the stated/adjusted working pressure. In order to protect the pump against cavitation due to poor water flow, a low water cut-out is arranged which stops the machine as soon as the flow pressure drops below 1 bar.

Downstreams of the high pressure pump a locked and sealed unloader valve is installed which opens as soon as the operating pressure is exceeded by more than 10 % and returns the water, which cannot be taken by the nozzle, back into the suction line of the pump.

Model HPCExtreme 330 only: By opening of the rotary handle of the double lance the working pressure can be adjusted as required.

The machine is equipped with a circulation shut-off system and additionally with a thermo valve in order to protect the pump against overheating. After closing the spray pistol the unloader valve opens, and returns the circulating water back into the suction line. If during that procedure the water temperature exceeds 60 °C, the thermo valve opens, releases a small amount of hot water, and cold water can enter the pump. Re-starting and immediate generation of required/adjusted working pressure is achieved by opening the spray pistol again, allowing to continue the cleaning task without delay.

The range of applications can be extended by a variety of accessories available. Contact your local UNITOR representative.

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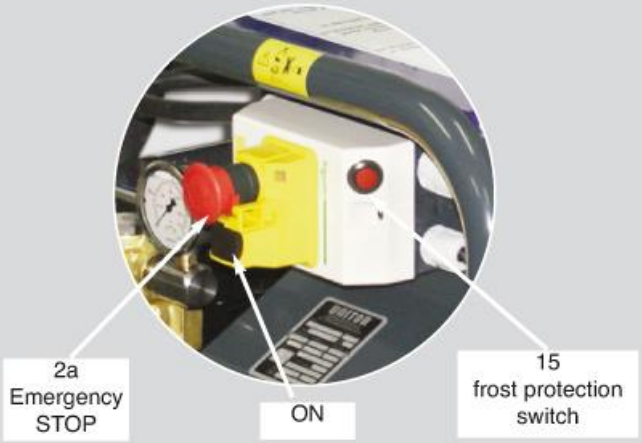
HPCExtreme 330

1	Electric motor
2	ON/OFF switch
3	Unloader valve
4	Pressure gauge
5	Water IN with filter cartridge
8	High-pressure pump
11	High-pressure water OUT
15	Frost protection switch
29	High-pressure hose
30	Spray pistol 330 bar servo
30.1	Double lance with pressure regulation
80	Parking brake



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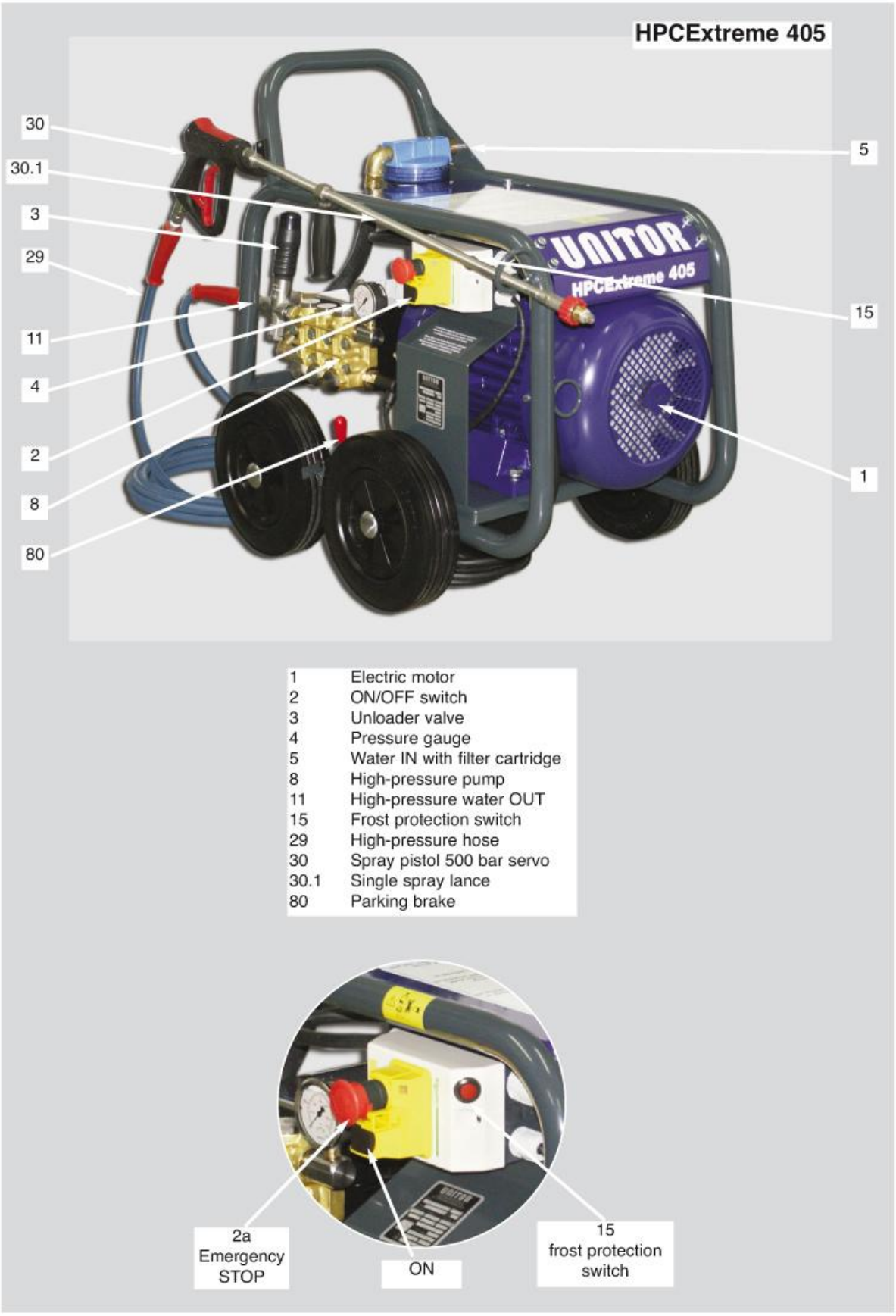

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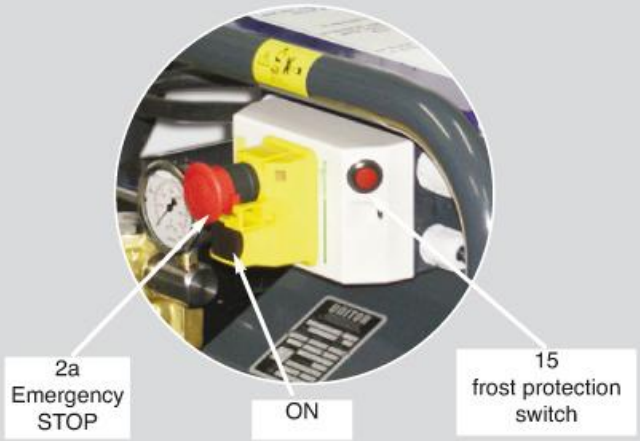

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4. Start-up / Shut-down

Before Start-up:

Read and observe operation manual.

ATTENTION

In order to guarantee proper function and trouble-free operation, the following checks to be carried out before start-up:

- Check electricity supply with electric data on type shield.
  If voltage deviates by more than 10 %, there is a risk of damage due to overheating.
- General condition of the unit (connections, gaskets, etc.).
- Power cables/connections (see p. 11).
- High pressure hoses, hose pipes, whether damaged.
- Air supply, cooling air grill must not be covered.
- Correct oil level of high pressure pump (oil window/dip stick).
- High pressure pump: OSP special pump oil (see Technical Data).
- Pump/pump connections whether leaking.
- Machine only to be run with absolutely clean water. Before connecting the water supply hose, rinse it thoroughly. Depending on feed water quality, regularly check water filter in short intervals, replace if needed.
- Machine only to be run horizontally (+/- 5°).

ATTENTION

In order to guarantee proper function and trouble-free operation, the following checks to be carried out during working:

- Observe pressure variations on pressure gauge.
- Observe leaks at high pressure pump, hose pipes, connections.
- Observe abnormal noise.

In case of malfunctions immediately stop machine, eliminate cause according to chapter „Trouble Shooting“, call qualified service.

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Connections

Water Supply

Connect water inlet (6) of the machine to water source with a clean hose (diameter see table below). Before connecting water supply hose, rinse out thoroughly. In case of connection to the potable water distribution, observe DIN 1988 (for momentary connections use a backflow preventer with non-return function and ventilation).

Flow pressure machine in operation	Water connection
minimum: 2 bar maximum: 8 bar	min. ≥ ¾" water supply hose

ATTENTION

Insufficient water supply will cause heavy damage on high pressure pump (cavitation).

Power Supply

Arrange correct electric connection with correct plug/socket (see electric wiring diagram **and** type shield) which is protected by 3 x 32 A (slow). Only correctly dimensioned cables to be used (see table). Extension cables on cable reels to be reeled off completely, in order to avoid overheating of the reel. A faulty current protection switch to be foreseen. National technical regulations to be observed.

Lead length	Cross section
up to 20 m	4 mm²
20 m to 50 m	6 mm²
50 m to 80 m	10 mm²

ATTENTION

High Pressure Connection

Connect high pressure hose to high pressure outlet (11) by means of the union without using tools.

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Operation HPC Extreme 330

This machine is equipped with an EMERGENCY STOP switch. In case of emergency push EMERGENCY STOP (2a).

ATTENTION

Before starting the machine EMERGENCY STOP switch (2a) to be unlocked by slightly turning it clockwise.

- Fully open water source.
- Unlock/release spray pistol, bleed unit.
- Unlock EMERGENCY STOP (2a) by slightly turning it clockwise.
- Push switch ON (2).

Be aware of torque and recoil.

- Carry out cleaning task.

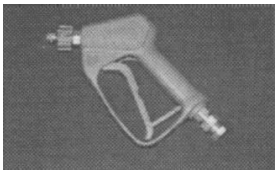
Pressure Regulation
Pressure can continuously be adjusted as required by opening the turning handle of the double lance.

Counter-clockwise: **pressure reduction**
Clockwise: **pressure increase**

ATTENTION

When pistol is closed, machine is running in circulation mode. If in this working condition the water temperature exceeds 60 °C a thermo valve opens, releases small amounts of hot water and same amount of cold water enters.

After Work



- Push EMERGENCY STOP (2a), machine stops.
- De-pressurize spray pistol by shortly opening and closing.
- Lock spray pistol.
- Disconnect machine from water and power source.
- If the machine has been run with sea water, thoroughly flush with sweet water after use, in order to avoid corrosion. The unit must never be stored with sea water residues inside.
- Thoroughly clean high pressure hose. In case of damage (cuts, abrasions, kinks, etc.) replace high pressure hose for safety reasons.
- Only original high pressure hoses to be used. Otherwise CE Declaration of Conformity and warranty will expire.
- Reel up high pressure hose properly without any loops.
- Store machine and accessories in a dry, frost-protected area.

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Particularly note:
In case of malfunctions, eliminate cause according to chapter „Trouble Shooting“, call qualified service.

In case frost is likely, frost protection to be carried out (see chapter „Maintenance and Care“), otherwise severe damage will result.

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Operation HPC Extreme 405 / 520

These machines are equipped with an EMERGENCY STOP switch. In case of emergency push EMERGENCY STOP (2a).

ATTENTION

Before starting the machine EMERGENCY STOP switch (2a) to be unlocked by slightly turning it clockwise.

- Fully open water source.
- Unlock/release spray pistol, bleed unit.
- Unlock EMERGENCY STOP (2a) by slightly turning it clockwise.
- Push switch ON (2).

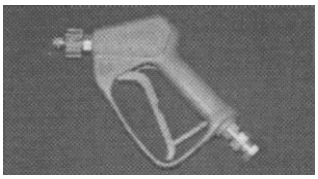
Be aware of torque and recoil.

- Carry out cleaning task.

ATTENTION

When pistol is closed, machine is running in circulation mode. If in this working condition the water temperature exceeds 60 °C a thermo valve opens, releases small amounts of hot water and same amount of cold water enters.

After Work



- Push EMERGENCY STOP (2a), machine stops.
- De-pressurize spray pistol by shortly opening and closing.
- Lock spray pistol.
- Disconnect machine from water and power source.
- Thoroughly clean high pressure hose. In case of damage (cuts, abrasions, kinks, etc.) replace high pressure hose for safety reasons.
- Only original high pressure hoses to be used. Otherwise CE Declaration of Conformity and warranty will expire.
- Reel up high pressure hose properly without any loops.
- Store machine and accessories in a dry, frost-protected area.

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Particularly note:
In case of malfunctions, eliminate cause according to chapter „Trouble Shooting“, call qualified service.

In case frost is likely, frost protection to be carried out (see chapter „Maintenance and Care“), otherwise severe damage will result.

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5. Maintenance and Care

Every machine is only as reliable as maintenance is carried out.

ATTENTION

The manufacturer offers maintenance agreements for every machine comprising the yearly safety inspection. Contact your local distributor for more information.

ATTENTION

The machine to be inspected every year by qualified personnel, in order to guarantee trouble-free and safe operation. Inspection results to be recorded and to be made available to authorities on request. The manufacturer offers qualified service personnel to carry out safety inspections at attractive prices.

ATTENTION

In order to guarantee reliability and trouble free operation of the machine, it is of vital interest to follow the instructions below:

ATTENTION

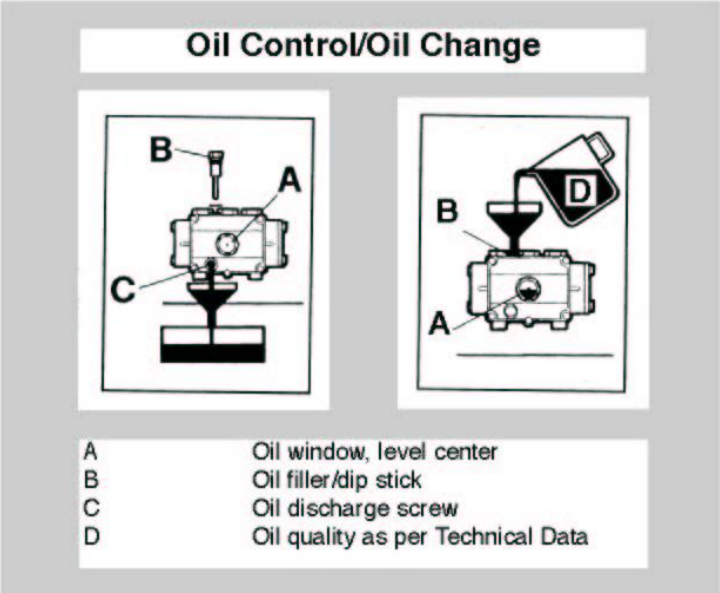
If the required maintenance intervals are disregarded, warranty will expire.

High Pressure Pump

First oil change after 50 operating hours, further oil changes after every 500 operating hours, minimum once per year. In case the oil becomes milky due to condensate formation, stop the machine immediately and carry out oil change. If this happens repeatedly, arrange replacement of all pump seals by qualified personnel.

ATTENTION

For the high pressure pump only special pump oil OSP to be used, as otherwise guarantee expires.



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Cartridge Filter (micro filter 25/50 µm)

ATTENTION

Upstreams of the high pressure pump there is a cartridge filter (5) installed. The filter cartridge to be replaced whenever required.

Frost Protection

ATTENTION

Frost protection of the entire water system during storage and transport is a must, as otherwise heavy damage on the system and severe dangers during operation may occur.

The best frost protection is to store the machine and accessories in a frost-protected room.

If frost is likely during storage and/or transportation the machine to be protected as described below:

- Mix 2 Liters of a 1 : 1 water/anti-freeze liquid (e.g. Glysantin) in a clean vessel, dip water connecting hose into anti-freeze liquid and start pump by pressing motor protection switch and red frost protection switch on the right side of electric box simultaneously.
- Open spray pistol and return drawn-off anti-freeze liquid into the vessel, so allowing the liquid to circulate through the system. The frost protection switch (15) to be kept pressed during the procedure.
- Spray pistol to be opened and closed several times in order to fill unloader valve and pressure gauge with anti-freeze liquid.
- Stop pump, release frost protection switch and disconnect all hoses.
- Machine is now protected against frost to –30 °C.

Disregarding frost protection instructions will result in heavy damage of the water carrying components.

ATTENTION

Never simply dump anti-freeze liquid but collect it for re-use or dispose according to environmental regulations.

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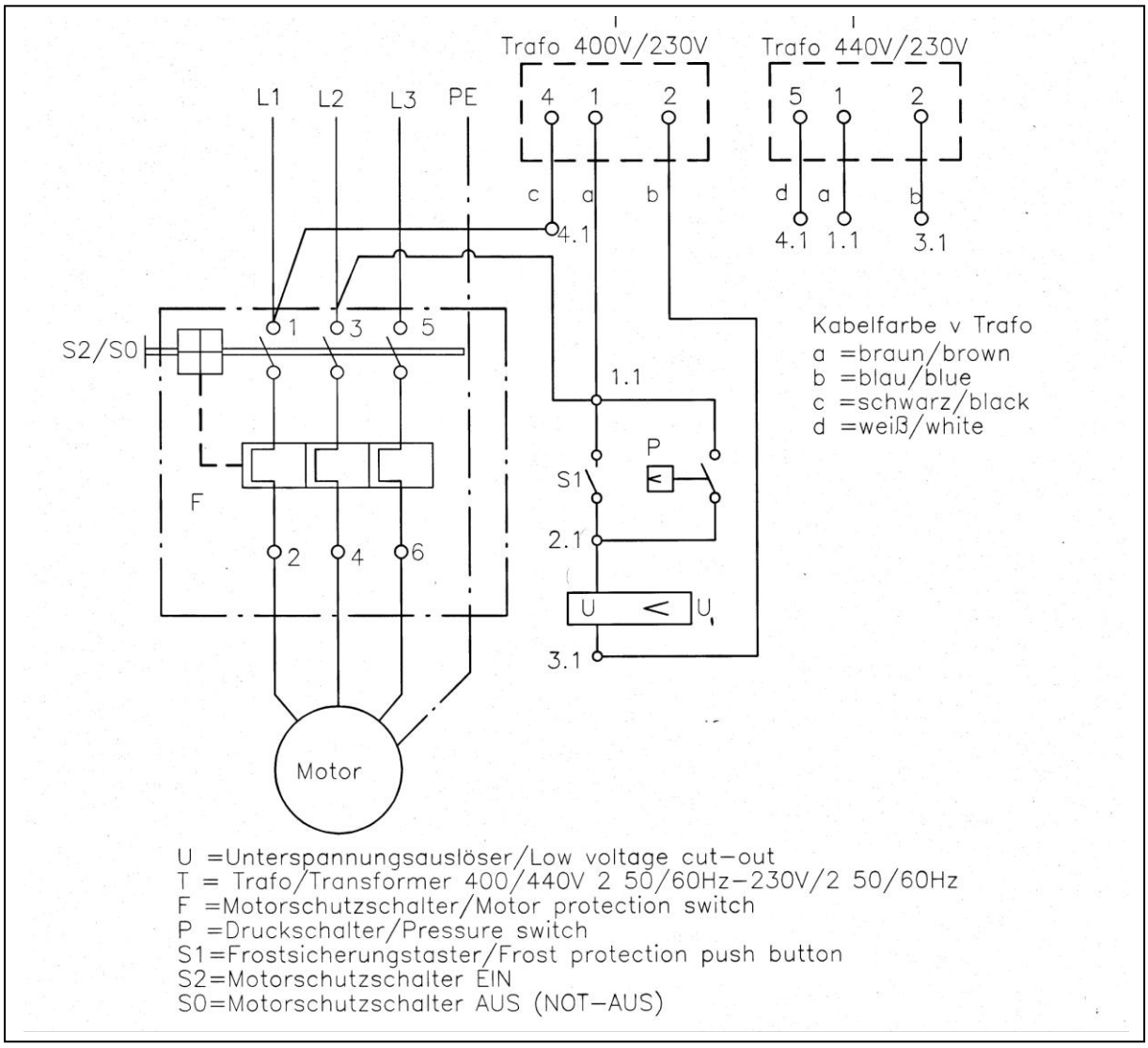
6. **Electric Wiring Diagrams**
Model HPCExtreme 330 / 405 / 520
400 Volt / 3~50 Hz
440 Volt / 3~60 Hz



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7. Technical Data

Technical Data	HPCExtreme 330	HPCExtreme 405	HPCExtreme 520
Water flow	1320 l/h	1320 l/h	1020 l/h
Unloading pressure	330 bar	405 bar	550 bar
Working pressure	adjustable max. 310 bar	385 bar	150 – 500 bar
Power supply	**400 V / 3 ~ 50 Hz**	**400 V / 3 ~ 50 Hz**	**400 V / 3 ~ 50 Hz**
Electric motor power	11 kW	15 kW	15 kW
Pump speed	1420 1/min	1420 1/min	1420 1/min
Amperage	25 A	30 A	30 A
Noise level Lp/Lw *	61/74 dB(A)	62/71 dB(A)	69/81 dB(A)
Recoil force	94 N	106 N	99 N
Dimensions (L x W x H mm)	740 x 610 x 740 mm	800 x 600 x 750 mm	800 x 600 x 810 mm
Weight	115 kg	159 kg	166 kg
Water inlet temperature max.	60 °C	60 °C	60 °C
Spray nozzle	2038 HIP	2338 HIP	3538 HIP
Pump Oil ** 1,04 l	OSP special pump oil	OSP special pump oil	OSP special pump oil
IP Code	55	55	55

Technical Data	HPCExtreme 330	HPCExtreme 405	HPCExtreme 520
Water flow	1320 l/h	1320 l/h	1020 l/h
Unloading pressure	330 bar	405 bar	550 bar
Working pressure	adjustable max. 310 bar	385 bar	150 – 500 bar
Power supply	**440 V / 3 ~ 60 Hz**	**440 V / 3 ~ 60 Hz**	**440 V / 3 ~ 60 Hz**
Electric motor power	13 kW	18 kW	18 kW
Pump speed	1720 1/min	1720 1/min	1720 1/min
Amperage	23 A	27 A	27 A
Noise level Lp/Lw *	61/74 dB(A)	62/71 dB(A)	69/81 dB(A)
Recoil force	94 N	106 N	99 N
Dimensions (L x W x H mm)	740 x 610 x 740 mm	800 x 600 x 750 mm	800 x 600 x 810 mm
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Pump Oil ** 1,04 l	OSP special pump oil	OSP special pump oil	OSP special pump oil
IP Code	55	55	55

*** according to DIN EN ISO 3744**

**** Specification: Hypoid Oil SAE 85/90, 78 cSt./10,3 ° E/50 °C with EP high pressure additives, e.g. TEXACO Geartex EP-B-85W/90**

Standard Scope of Supply:
Low water cut-out, frost protection switch, water connecting coupling/hose fitting GEKA ¾", 5 m power cable 4 x 4 mm², double spray wand with pressure regulation (HPCExtreme 330 only); HPCExtreme 405 and 520 with single spray wand. Spare cartridge 5", 50 µm for water filter. Mounting tool for filter housing. Copy of electric wiring diagram in switchbox cover.

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Trouble Shooting

Electric power can cause severe injuries or death. Defective electrical components to be immediately replaced, possible causes for accidents to be eliminated without delay. Any repair work must only be carried out by qualified personnel.

Only original equipment delivered, respectively expressively approved by the manufacturer to be installed, as otherwise warranty and Declaration of Conformity will expire, health and safety standards are not guaranteed.

During repair or maintenance work, unit to be disconnected from electrical network.

Malfunction	Cause	Remedy
Electric motor does not start.	- Machine not connected to power supply. - Fuse burnt. - Low water cut-out tripped. - EMERGENCY STOP switch (2a) locked - Phase missing.	- Ensure correct power supply. - Phase to be mounted as per electric wiring diagram. - Ensure sufficient water supply. - Unlock EMERGENCY STOP (2a) by slightly turning clockwise. - Replace fuse. If it burns again, call qualified service.
Electric motor suddenly stops, motor protection switch trips.	- Poor water supply - Fuse burnt. (phase missing). - Low/wrong voltage.	- Eliminate cause and re-start machine with ON/OFF switch. - Replace fuse. If it burns again or motor is noisy, call qualified service. - Ensure correct power supply.
Electric motor hums upon start-up.	- Fault in electrical network. - Fuse burnt. (phase missing).	- Check phases in electric plug. - Replace fuse. If it burns again, call qualified service.
Operating pressure not achieved/varies	- **Model 330**: rotary valve open - Nozzle worn. - Incorrect nozzle. - Nozzle partly clogged. - Filter cartridge clogged. - Pump valves sticking/dirty. - Unloader valve leaking internally.	- Close valve of double lance. - Replace nozzle. - Install correct nozzle. (see tech. data) - Remove/clean/re-install nozzle. - Replace filter cartridge. - Remove/clean/re-install valves. - Call qualified service.
Vibrations on high pressure hose and spray pistol	- Air in unit - Pump valves sticking/dirty.	- Bleed unit. Open pressure regulating handle and pistol, until continuous pressure is reached. - Remove/clean/re-install valves.

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Geräteart: Unbeheizter Hochdruckreiniger > 250 bar
Description: Cold water high pressure cleaner > 250 bar

Gerätetyp: HPCExtreme (Elektromotor/electric motor 3~400 V/ 50/60 Hz)
Model 330 / 405 / 520 310 / 385 / 500 bar

Seriennr.:
Serial No.:

DE	**"CE" KONFORMITÄTSERKLÄRUNG** Wir bestätigen, daß das oben genannte Erzeugnis nachfolgenden Anforderungen entspricht:
EN	**"CE" CONFORMITY DECLARATION** We declare on our own responsibility that the product to which this declaration refers is in accordance with the following rules or with other documents containing official rules:
FR	**DECLARATION DE CONFORMITE "CE"** Nous déclarons sous notre exclusive responsabilité que le produit auquel cette déclaration se réfère est conforme aux normes suivantes ou à d' autres documents qui contiennent normes officielles:
ES	**DECLARACIÓN "CE" DE CONFORMIDAD** Bajo nuestra exlusiva responsabilidad, declaramos que el producto, al que esta declaración se refiere, es conforme con las siguientes normas u otros documentos normativos:
IT	**DICHIARAZIONE DI CONFORMITA' "CE"** Dichiariamo sotto la nostra esclusiva responsabilità che il prodotto al quale questa dichiarazione si riferisce è conforme alle seguenti norme o ad altri documenti normativi:
PT	**DECLARAÇÃO "CE" DE CONFORMIDADE** Declaramos sob a nossa exclusiva responsabilidade que o produto ao qual esta declaração se refere está em conformidade com as seguintes normas ou outros documentos normativos:
NL	**KONFORMITEITSVERKLARING "CE"** Wij verklaren onder onze exklusive verantwoordelijkheid dat het product: waarop deze vrklaring betrekking heeft, konform is aan de volgende normen en aan andere daarvan deel uitmakende documenten:
DA	**OVERENSSTEMMELSESERKLÆRING "CE"** Vi forsikrer under eget ansvar at følgende produkt som omfatts af denne erklæring er i overensstemmelse med vilkårene i følgende direktiv eller andre love:
SV	**FÖRSÄKRAN OM ÖVERENSSTÄMMELSE "CE"** Vi försäkrar under eget ansvar att följande produkt som omfatts av denna försäkran i överensstämmelse med villkoren i följande direktiv eller andra lagar:
N	**BEKREFTELSE OM OVERENSSTEMMELSE "CE"** Vi forsikrer under eget ansvar at følgende produkt som omfattes av denne bekreftelsen er i overensstemmelse med vilkårene i følgende direktiv eller andre lover:

FI	**YHDENMUKAISUUSVAKUUTUS "CE"** Vakuutamme omalla vastuulamme, että seuraava tuote jota tämä vakuutus koskee, on yhdenmukainen seuraavassa direktiivissä tai muissa laeissa olevien ehtojen kanssa:
EL	**Δήλωση συμβατότητας "CE"** Δηλώνουμε υπεύθυνα ότι το προϊόν στο οποίο αναφερεται η παρούσα δήλωση ειναι δύμφωνο με τους παρακάτω κανονισμούς ή άλλα νομοθετικά εγγραφα:
SK	**PREHLÁSENIE "EÚ" O ZHODNOSTI** Prehlasujeme na vlastnú zodpovednosť, že výrobok, na ktorý sa vzťahuje toto prehlásenie je zhodný s nasledujúcimi normami a inými príslušnými dokladmi:
HU	**"CE" MEGFELELŐSÉGI NYILATKOZAT** Saját felelősségünk alatt kijelentjük, hogy a termék, amelyre a nyilatkozat vonatkozik, megfelel az alábbi előírásoknak vagy szabályozásoknak:
CS	**PROHLÁŠENÍ "CE" O SHODĚ** Prohlašujeme výlučně na vlastní zodpovědnost, že výrobek, na který se vztahuje toto prohlášení je ve shodě s následujícími normami či jiným normativními dokumenty:
ET	**"CE" VASTAVUSDEKLARATSIOON** Deklareerime meie ainuvastutuse juures, et see toode vastab järgmistele standarditele ja standardiseerimise dokumentidele:
LT	**"CE" ATITIKTIES DEKLARACIJA** Prisiimdami visą atsakomybę, mes pareiškiame, kad produktas, kuriam taikoma ši deklaracija, atitinka šiuos standartus ir kitus teisinius aktus:
SL	**IZJAVA O SKLADNOSTI "CE"** Izjavljamo na našo odgovornost, da je izdelek, na katerega se nanaša ta deklaracija, v skladu s sledečimi predpisi ali ostalimi zakonskimi dokumenti:
PL	**DEKLARACJA ZGODNOŚCI "UE"** Oświadczamy na naszą wyłączną odpowiedzialność, że produkt, którego dotyczy niniejsza karta gwarancyjna, jest zgodny z następującymi normami lub z innymi dokumentami prawnymi:
LV	**"CE" ATITIKTIES DEKLARACIJA** Prisiimdami visą atsakomybę, mes pareiškiame, kad produktas, kuriam taikoma ši deklaracija, atitinka šiuos standartus ir kitus teisinius aktus:

2006/42EG ● 2006/95EG ● 2004/108EG ● 2002/44EG ● 2000/14EG ● 97/23EG

Folgende harmonisierte Normen wurden angewandt / applied harmonized standards
EN 1829, EN 12100-1/2, EN 55014-1/2, EN 61000-3-2, EN 60704-1

Der Unterzeichnende ist bevollmächtigt, die technischen Unterlagen zusammenzustellen.
Signatory is authorized to compile technical data.

Bei nicht von uns genehmigten Änderungen der Maschine verliert diese Erklärung ihre Gültigkeit.
This declaration is ceased in case of alterations of the product not approved by us.

22949 Ammersbek, 30.12.2009

ppa. Grigoleit
Technischer Leiter/Technical Manager
von Oertzen GmbH

Fraser/surrey Gaspe Gros Caouna Halifax Hamilton Harbour Grace Holyrood Kitimat Long Pond Marytown Montreal Nanaimo New Westminster Bc Pictou/halifax Pointe Aux Pic.quebec Port Alfred Port Cartier Port Colborne Port Hawkesbury Port Mellon Port Moody Port Of Quebec Port Weller Powell River Prince Rupert Roberts Bank Saint John Sarnia, Ontario Sept Iles Seven Islands Sorel Souris/ halifax Squamish St. Catherines St.john's, Nfld St.romuald Stephensville Summerside/halifax Three Rivers Thunder Bay Toronto alleyfield Vancouver Victoria Weymouth Windsor Yarmouth Ancud / Laitec Antofagasta Arica Caldera Concepcion Bay Coquimbo Coronel Corral Huasco Las Ventanas Lirquen Lota Penco Puerto Montt Puerto Williams Punta Arenas Quintero San Antonio San Vicente Talcahuano Tocopilla Valparaiso Antilla Bahia Honda Banes Baracoa Cabanas Caibarien Cardenas Casilda Ceiba Hueca Cienfuegos Guantanamo Guayabal Havana Isabel De Sagua Manati Mariel Media Luna Moa Nicaro Niquero Nuevitas Pilon Puerto Padre Santiago De Cuba Sigloo **Genoa** Finn Tanamo Tunas De Zaza Vita Balao Esmeraldas Guayaquil La Libertad Manta Puerto Bolivar Freeport/bahamas Guam Mahdia Acapulco Campeche Ciudad Del Carmen Coatzacoalcos Cozumel Dos Bocas Ensenada Guaymas La Paz Lazaro Cardenas Mazatlan Progreso Puerto Vallarta Salina Cruz Tampico Topolobampo Tuxpan Vera Cruz Bonaire Bullen Bay Curacao Aguadulce Almirante Armuelles Bahia Las Minas Balboa Cristobal Manzanillo Int.term. Vacamonte Callao Chimbote Ilo Matarani Paita Pisco Guayama Guayanilla Mayaguez Ponce San Juan Yabucoa St. Vincent Chaguaramas La Brea Point Fortin Point Lisas Pointe-a-pierre Port Of Spain Tembladora Aberdeen,wa Alameda Albany,n.y. Alexandria, Va Algiers Point Amelia Anacortes, Wa Anchorage,ak Annapolis,md Antioch Aransas Pass Tx Astoria, Or Baltimore Baton Rouge Bayonne Baytown Beaumont Bellingham, Ma Bellingham, Wa Benicia, Ca Boston, Ma Bridgeport Bridgeport, Conn Brooklyn, Ny Brownsville Tx Brunswick Brunswick, Ga ucksport,me Buras Camden Camden, Nj Cameron La Chalmette Charleston, Sc Cheasapeake Chester Chicago Claymont Convent Coos Bay, Or Corpus Chr.tx Crockett Darrow Davant Deer Park Delaware City Destrehan Donaldsonville Dutch Harbor, Ak Eastport, Me Eureka Everett, Wa Fairless Hills Famagusta Ferndale,wa Freeport Tx Galveston Tx Garyville Geismar Georgetown, Sc Gloucester, Nj Good Hope Gramercy Grand Isle Grays Harbour Gretna Gulfport, Ms Harvey Honolulu, Hawaii Hoquiam, Wa Houma Jacksonville Kalama Kalama, Wa Kenai Key West Lake Charles La Long Beach Long Island, Ny Longview, Wa Loop Terminal Los Angeles Manchester, Wa Manhattan, Ny Marcus Hook, Pa Martinez Miami Mobile Morehead City Morehead City, Nc Morgan City Morrisville, Pa Myrtle Grove Naples Nederland Tx New Haven, Conn New Iberia New London New Orleans New York Newington, Nh Newport News, Va Newport, Or Newport, Ri Nikiski Norco Norfolk Oakland Olympia, Wa Orange, **Rotterdam** Tx Palm Beach Panama City, Fl Pasadena Pascagoula, Ms Paulsboro, Nj Pennsauken, Nj Pensacola, Fl Petaluma Philadelphia Piney Point, Md Pittsburg Plaquemine Point Comfort Tx Port Allen Port Angeles, Wa Port Arthur Tx Port Canaveral Port Everglades Port Hueneme Port Isabel Tx Port Manatee, Fl Port Neches Tx Port Royal, Sc Port St. Joe, Fl Port Townsend, Wa Portland, Me Portland, Or Portsmouth Portsmouth, Nh Providence, Ri Queens, Ny Redwood City Reserve Revere, Ma Richmond Richmond, Va Sacramento Salem Salem, Ma San Diego San Francisco Sandwich, Ma Savannah Searsport, Me Seattle Seward Sparrows Point St.petersburg, Fl St.rose Staten Island, Ny Stockton Tacoma, Wa Tampa Texas City The Bronx, Ny The Loop Valdez Vancouver, Wa Venice West Palm Beach Westville, Nj Wilmington, Ca Wilmington, De **Houston** Wilmington,nc Yonkers, Ny Yorktown, Va Fray Bentos Jose Ignacio Montevideo Nueva Palmira Amuay Bay Bajo Grande Cumarebo El Palito El Tablazo Guanta Guaranao Jose Bay La Guaira La Salina Maracaibo Pertigalete Puerto Cabello Puerto La Cruz Puerto Miranda Puerto Ordaz Punta Cardon Punta De Palmas Punto Fijo San Lorenzo, Vz St.croix Aeroskobing Assens Bagenkop Bogense Copenhagen Ebeltoft Enstedvaerket Havn Esbjerg Fakse Ladeplads Havn Fredericia Frederiksund Frederiksvaerk Fredrikshavn Faaborg Gedser Great Belt Grenaa Graasten Gulfhavn Haderslev Halsskov Hanstholm Helsingor Hirtshals Hobro Holbaek Horsens Kalundborg Kertminde Koge Kolding Korsor Lemvig Mariager Marstal **Oslo** Middlefart Naestved Nakskov Nyborg Nykobing Falster Nykobing Mors Nykobing Skjaelland Odense Orehoved Falster Randers Ronne Rudkobing Sakskobing Skaelskor Skaerbaek Skagen Skive Sonderborg Stege Stigsnaesvaerkets Havn Svendborg Studstrupvaerkets Havn Thisted Thorshavn Vejle Vordingborg Aabenraa Aalborg Aarhus Kunda Loksa Muuga Paldiski Paljassaare Parnu Tallinn Dalsbruk Hamina/fr.havn Hanko/hangoe Helsinki Ingaa/inkoo Jakobstad Kalajoki Kantvik Kaskinen/kasko Kemi Kemio Kokkola/karleby Kotka Koverhar Kristinestad Lappvik Lovisa Mariehamn Merikarvia Nystad Naantali Oulu Pargas Pori Porvoo/borgaa Rauma Raahe/brahestad Skoeldvik Tammisaari Teijo Tolkis Torneaa Turku Valkom/valko Vaasa Akureyri Isafjørdur Reykjavik Arklow Aughinish Bantry Cork Drogheda Dublin Dun Laoghaire Dundalk Foynes Galway Limerick Moneypoint Ringaskiddy Tarbert Waterford Liepaja Mersrags Riga Roja Salacgriva Skulte Ventspils Butinge Klaipeda Agnefest Alta **Piraeus** Arendal Asker Askoy Aukra Aure Averoey Bergen Berlevaag Bodoe Boemlo Brattvag Breivika Brevik Baatsfjord Dirdal Drammen Dusavik Egersund Eide Elnesvaagen Eydehavn Fagerstrand Farsund Finnsnes Flekkefjord Floroe Flaam Fosnavaag Fraena Fredrikstad Frei Gamvik **Genoa** Geiranger Gjemnes Glomfjord Gravdal Grimstad Gudvangen Halden Halsa Hammerfest Harstad Haugesund Hellesylt Heroeya Hjelmeland Hoeyanger Holla Holmestrand Hommelvik Honningsvaag Horten Husnes Jelsa Jessheim Joerpeland Joessinghamn Kambo Karmoey Kirkenes **Singapore** Krageroe Kristiansand Kristiansund Kvinesdal Kyrksaeterora Kaarsto Larvik Leknes Lillesand Lyngdal Mandal Mehavn Mo I Rana Molde Mongstad Mosjoen Moss Muruvik Maaloey Namsos Narvik Nesset Odda Oelen Oersta Orkanger Porsgrunn Rafnes Randaberg Raubergvika Risoer Sandefjord Sandnes Sandnessjoen Sarpsborg Sauda Skien Skjervoey Slagen Slagentangen Smoela Soevik Sola Sorreisa Sortland Stavanger Stord Sture Sunndalsoera **Dubai** Surnadal Svelgen Svolvaer Tananger Tau Thamshamn Tingvoll Tjeldbergodden Toensberg Tofte Tomrefjord Tromsoe Trondheim Tustna Tvedestrand Tyssedal Tysvaer Ulsteinvik Vadsoe Vardoe Verdal Vik Volda Aagotnes Aaheim Aalesund Aalvik Aardal i Ryfylke Aardalstangen Gdansk Gdynia Kolobrzeg Police Swinoujscie Szczecin Arkangelsk Baltiysk De Kastri Kaliningrad Kandalaksha Kavkaz Kronshtadt Lomonosov Murmansk Nakhodka Novorossiysk Primorsk Sakhalin Sakhalin Severomorsk St. Petersburg Svetlyi Taman Temruk Temryuk Tuapse Vladivostok Vostochniy, Port Vostochnyi Vyborg Bohus Brofjorden Falkenberg Gavle Gothenburg Hallstavik Halmstad Helsingborg Hoganas Holmsund Hudiksvall Iggesund Kalmar Karlshamn Karlskrona Karlstad Koeping Landskrona Lidkoping Lilla Edet Luleaa Lysekil Malmoe Mariestad Marstrand Munkedal Norrkoeping Norrsundet Norrtalje Nynashamn **Rotterdam** Ornskoldsvik Oskarshamn Oxelosund Pitea **Shanghai** Simrishamn Skarhamn Skelleftehamn Skutskar Slite Soderhamn Sodertalje Solvesborg Stenungsund Stockholm Stromstad Sundsvall Surte Trelleborg Uddevalla Umeaa Varberg Vastervik Vasteraas Visby Wallhamn Ystad Aberdeen Appledore Arbroath Ardersier Ardrossan Avonmouth Ayr Ballycastle Banff Barking Barnstaple Barrow In Furness Barry Barton On Humber Belfast Berwick Upon Tweed Billingham Birkenhead Blyth Boston Bowling Braefoot Bay Bridgend Bridlington Bridport Bristol Briton Ferry Brixham Bromborough Buckie Burntisland Burton Upon Stather

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